

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An information-recording method for recording information on an information-recording medium, the information-recording method comprising:

moving a light beam at a selected linear velocity relative to the information-recording medium;

controlling the light beam to generate a multi-pulse having at least three power levels of a first power level P_h , a second power level P_l which is lower than the first power level, and a third power level P_m which is between the first and second power levels, the multi-pulse being repeatedly modulated between the first power level P_h and the third power level P_m , the second power level P_l being smaller than the third power level P_m , the second power level P_l being a crystallization level;

adjusting the third power level P_m in response to the selected linear velocity;
and

recording the information by irradiating the information-recording medium with the controlled light beam including the adjusted third power level to change a state of an irradiated portion of the information-recording ~~medium-medium~~.

wherein a ratio $(P_m - P_l)/(P_h - P_l)$ of a difference between the third power level P_m and the second power level P_l with respect to a difference between the first power level P_h and the second power level P_l is adjusted in response to the linear velocity.

2. (Original) The information-recording method according to claim 1, wherein the third power level P_m is adjusted so that the third power level P_m is increased in proportion to the linear velocity.

3-5. (Canceled)

6. (Currently Amended) The information-recording method according to ~~claim 5,~~claim 1, wherein the ratio $(P_m - P_1)/(P_h - P_1)$ is adjusted so that the ratio $(P_m - P_1)/(P_h - P_1)$ is increased in proportion to the linear velocity.

7. (Original) The information-recording method according to claim 1, wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to the third power level P_m .

8. (Original) The information-recording method according to claim 7, wherein the pulse width of the leading pulse or the tail pulse of the multi-pulse is adjusted so that the pulse width is increased in proportion to the third power level P_m .

9. (Original) The information-recording method according to claim 1, wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to a ratio P_m/P_h of the third power level P_m with respect to the first power level P_h .

10. (Original) The information-recording method according to claim 9, wherein the pulse width of the leading pulse or the tail pulse of the multi-pulse is adjusted so that the pulse width is increased in proportion to the ratio P_m/P_h of the third power level P_m with respect to the first power level P_h .

11. (Currently Amended) ~~The information-recording method according to claim 1,~~An information-recording method for recording information on an information-recording medium, the information-recording method comprising:

moving a light beam at a selected linear velocity relative to the information-recording medium;

controlling the light beam to generate a multi-pulse having at least three power levels of a first power level P_h , a second power level P_1 which is lower than the first power level, and a third power level P_m which is between the first and second power levels, the

multi-pulse being repeatedly modulated between the first power level P_h and the third power level P_m , the second power level P_1 being smaller than the third power level P_m , the second power level P_1 being a crystallization level;

adjusting the third power level P_m in response to the selected linear velocity;

and

recording the information by irradiating the information-recording medium with the controlled light beam including the adjusted third power level to change a state of an irradiated portion of the information-recording medium,

wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to a ratio $(P_m - P_1)/(P_h - P_1)$ of a difference between the third power level P_m and the second power level P_1 with respect to a difference between the first power level P_h and the second power level P_1 .

12. (Original) The information-recording method according to claim 11, wherein the pulse width of the leading pulse or the tail pulse of the multi-pulse is adjusted so that the pulse width is increased in proportion to the ratio $(P_m - P_1)/(P_h - P_1)$ of the difference between the third power level P_m and the second power level P_1 with respect to the difference between the first power level P_h and the second power level P_1 .

13. (Previously Presented) The information-recording method according to claim 1, further comprising reading the selected linear velocity from the information-recording medium before recording the information, wherein the information is recorded with a CLV system.

14. (Previously Presented) The information-recording method according to claim 1, wherein the information is recorded with a CAV system, and the selected linear velocity differs depending on a position on the information-recording medium in which the information is recorded.

15. (Currently Amended) An information-recording medium for recording information by irradiating the information-recording medium with a light beam to change a state of an irradiated portion of the information-recording medium, the information-recording medium comprising:

a recording layer which causes the change of state;

a substrate which supports the recording layer; and

management information which is recorded on the substrate or the recording layer, wherein:

the radiating light beam is modulated to contain a multi-pulse having at least three power levels of a first power level P_h , a second power level P_l which is lower than the first power level, and a third power level P_m which is between the first and second power levels, the multi-pulse being repeatedly modulated between the first power level P_h and the adjusted third power level P_m , the second power level P_l being smaller than the third power level P_m , the second power level P_l being a crystallization level; and

the management information includes information which relates to a linear velocity for moving the light beam relative to the information-recording medium and information which relates to the first power level P_h , the second power level P_l , and the third power level P_m adjusted in response to the linear ~~velocity-velocity~~, and the management information includes information which represents a ratio $(P_m - P_l)/(P_h - P_l)$ of a difference between the third power level P_m and the second power level P_l with respect to a difference between the first power level P_h and the second power level P_l .

16. (Original) The information-recording medium according to claim 15, wherein the management information includes a ratio P_m/P_h between the first power level P_h and the third power level P_m .

17. (Original) The information-recording medium according to claim 16, wherein the ratio P_m/P_h is adjusted in response to the linear velocity.

18. (Canceled)

19. (Currently Amended) The information-recording medium according to ~~claim 18,~~ claim 15, wherein the ratio $(P_m - P_1)/(P_h - P_1)$ is adjusted in response to the linear velocity.

20. (Original) The information-recording medium according to claim 15, wherein the management information includes information which represents a ratio P_m/P_1 between the third power level P_m and the second power level P_1 , and the ratio P_m/P_1 is adjusted in response to the linear velocity.

21. (Original) The information-recording medium according to claim 15, wherein the management information includes values of the first power level P_h , the second power level P_1 , and the third power level P_m at a plurality of recording speeds respectively.

22. (Canceled)

23. (Original) The information-recording medium according to claim 21, wherein a value of $(P_m - P_1)/(P_h - P_1)$ at a high linear velocity is larger than a value of $(P_m - P_1)/(P_h - P_1)$ at a low linear velocity.

24. (Previously Presented) The information-recording medium according to claim 15, wherein the information is recorded with a CLV system or a CAV system.

25. (Currently Amended) A method for controlling a light power for recording information on an information-recording medium by using a light beam having at least three power levels of a first power level P_h , a second power level P_1 which is lower than the first power level, and a third power level P_m which is between the first and second power levels, the method for controlling the light power comprising:

adjusting the third power level P_m in response to a linear velocity defined by the information-recording medium; and

controlling the light power to generate a multi-pulse which is repeatedly modulated at least between the first power level P_h and the adjusted third power level P_m ,

the second power level P_l being smaller than the third power level P_m and being a crystallization ~~level~~level,

wherein a value of $(P_h - P_m)$ at a high linear velocity is smaller than a value of $(P_h - P_m)$ at a low linear velocity; and

a value of the first power level P_h at the high linear velocity is larger than a value of the first power level P_h at the low linear velocity.

26. (Currently Amended) The method for controlling the light power according to claim 25, wherein at least one of P_m/P_l , P_m/P_h , and a ratio ~~$(P_m - P_l)/(P_h - P_l)$~~ $(P_m - P_l)/(P_h - P_l)$ is adjusted in response to the linear velocity when the third power level P_m is adjusted in response to the linear velocity determined depending on the information-recording medium.